REMARKS

This paper responds to the final Office action dated May 30, 2007, in which (i) claims 46-66, 68-74, and 78-80 were rejected and (ii) the reissue oath/declaration was noted as defective.

Claims 67, 74-77, and 81-105 are indicated as allowable in substance.

I. Status of Claims

Claims 46-105 remain pending and at issue.

Claim 100 has been amended to correct a typographical error.

The status of the claims is as follows:

Cancelled: Claims 1-45;

Amended: Claims 51, 53-55, 57-66, 68-71, 73, 84, 85, 89, 90, 94, 95, 99, 104, and 105;

Twice Amended: Claims 50, 52, 72, 74, 75, 81, 86, 91, 96, 100 and 101;

Thrice Amended: Claims 46, 47, 48, 49, 56, 67, and 76-78;

Four Times Amended: Claims 79 and 80; and,

Previously Added: Claims 82, 83, 87, 88, 90, 92, 93, 97, 98, 102, and 103.

II. Reissue Oath/Declaration

Applicants respectfully defer submission of a supplemental oath/declaration in accordance with the previous arrangement and understanding between former counsel for the applicants (Ms. Linda Deschere) and Examiner Evans and SPRE Tierney. During a telephone conference on June 21, 2005, deferral of the supplemental oath/declaration submission until all claims are indicated as allowable was found acceptable, for which the applicants and their undersigned attorney express their appreciation.

If the applicants' current understanding of the previous arrangement is inaccurate, the examiner is respectfully requested to contact the undersigned attorney.

III. Rejections under 35 U.S.C. §§103(a)

Claims 46-106 are pending and at issue.

Claims 67, 74-77, and 81-105 have been confirmed as reciting allowable subject matter, but objected to as dependent upon rejected base claims.

Claims 46-66, 68-73, and 78-80 stand rejected under either 35 U.S.C. § 103(a) as unpatentable over one or more of Sherman et al. ("Transient response of metals to ultrashort pulse excitation"), Schwab et al. ("Femtosecond-Excimer Laser Patterning of $YBa_2Cu_3O_7$ Films"), Alexander U.S. Patent No. 6,489,589, Lai U.S. Patent No. 5,984,916, Mourou et al. U.S. Patent No. 5,235,606, Wojnarowski et al. U.S. Patent No. 5,104,480, and a newly cited document Nishikawa et al. Japan Patent No. 62-144,893 (collectively, "the cited art").

Reconsideration and withdrawal are respectfully requested.

The examiner has conceded that all documents, except for the newly-cited document to Nishikawa et al., fail to teach a beam having a first area within a spot size that exceeds a breakdown threshold and a second area within that same spot size that does not exceed this breakdown threshold. Applicants submit that Nishikawa et al. also fails to teach or suggest the recited subject matter, and, *a fortiori*, no combination of the cited art could be said to cover the claimed subject matter. Applicants accordingly traverse the art-based rejections on at least the following grounds.

Each of the independent claims 46-50 and 78-80, as amended, requires that a beam be configured such that a first area within a spot size of the beam exceeds a fluence threshold and such that a second area within the spot size does not exceed the fluence threshold.

Nishikawa et al. does teach a technique for laser processing of a thin film body where a deposited thin metal film is removed when the beam intensity is higher than a threshold value (5). Nishikawa et al., however, clearly shows in Figure 1 that this threshold is met over the entire focal plane spot of the solid state laser beam (1). To confirm such teachings, Applicants submit herewith an information disclosure statement including a full translation of the Nishikawa et al. document. As described, Nishikawa et al. focuses a beam to a region overlapping a resin film and over which the entire corresponding thin metal film is removed.

The entire region is affected because, as noted, the entire spot at the focal plane is above the threshold intensity (5).

Not only is the entire spot size affected, but Nishikawa et al. arguably suggests that the width may in fact be much larger. Equation (1), for example, calculates a spot diameter that when applied to Figure 1 would appear to suggest a spot size of around 2-3 μm, but the resulting affected region is 50 μm, much larger. See, translation, page 4. In this way, Nishikawa et al. appears to succumb to the shortcomings in the art at that time, where laser systems were limited based on thermal diffusion fluence dynamics endemic to continuous beam or long pulse width sources. Such systems were erratic and prevented one from controllably affecting a narrow region of interest, and certainly none resulted in sub-spot size threshold breakdown. The present application discusses such shortcomings in numerous places. See, e.g., RE 37,585, col. 5, ll. 35 et seq.

In any event, Nishikawa et al. simply does not teach or suggest "configuring the beam such that a first area within a spot size of the beam exceeds a breakdown threshold and such that a second area within the spot size does not exceed the breakdown threshold," as recited in the rejected independent claims. A comparison of figure 1 of Nishikawa et al. to FIGS. 4 and 5 of the instant application provides an example of the differences when only a portion of the spot size is above a breakdown threshold and when the entire spot size is above a threshold.

All rejections are thus traversed.

Applicant further notes that the examiner has also cited other art that has not been relied upon. This art too fails to teach the recited subject matter. Funami et al., for example, describes a laser beam machine device, but the Gaussian profile in Figure 13b merely reflects that a machining condition region extends over an allowable machining area. There is no teaching or suggestion that only a portion of a spot size exceeds a breakdown threshold, especially given that Funami et al. is directed to **converting** the Gaussian profile (Figure 4a) to a uniform intensity distribution (Figure 4b) presumably to better control the machined area at the focal plane. In each example, Funami et al. describe systems that convert an intensity distribution from Gaussian to uniformly flat, thus (it would appear) confirming that at the time Funami et al did not believe one could effectively create breakdown regions only over a controllable portion of a spot size, using a Gaussian beam. The other cited-but-not-relied-

upon art would appear to be even further away from the mark and, thus, is not discussed further.

For at least the foregoing reasons (and the distinctions noted in the previous responses), applicants respectfully submit that the cited art fails to disclose or suggest configuring a beam such that a first area within a spot size of the beam exceeds a fluence threshold and such that a second area within the spot size does not exceed the fluence threshold, as recited in claims 46-50 and 78-80. It follows that claims 46-50 and 78-80 and, by implication, claims 51-66 and 68-73 dependent thereon, recite patentable subject matter over the cited art.

IV. Conclusion

For the foregoing reasons, it is submitted that all pending claims 46-105 are allowable over the cited references, and an indication to that effect is solicited.

Should the examiner wish to discuss the foregoing or any matter of form in an effort to advance this application toward allowance, the examiner is urged to telephone the undersigned at the indicated number.

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Respectfully submitted,

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